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AUTHOR HOETKER, JAMES; AHLBRAND, WILLIAM P., JR.
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ABSTRACT

THIS REPORT PRESENTS A CHRONOLOGICAL REVIEW (1893 TO 1963) OF FORMAL AND INFORMAL CLASSROOM OBSERVATIONAL STUDIES WHICH, IN EXAMINING THE USE OF RECITATION AS A PEDAGOGICAL METHOD, SHOW THAT TEACHERS TALK DURING THE MAJORITY OF CLASSROOM TIME, ASKING OR REACTING TO FACTUAL QUESTIONS POSED TO STUDENTS. INCLUDED IS A BRIEF DISCUSSION OF ARNO BELLACK'S RESEARCH, IN 11TH-GRADE SOCIAL STUDIES CLASSROOMS, OF THE VERBAL BEHAVIOR OF TEACHERS AND PUPILS, AND A SUMMARY OF HIS FORMULATION OF "RULES OF THE CLASSROOM LANGUAGE GAME." A TABLE IS PROVIDED COMPARING BELLACK'S RESULTS WITH THE FINDINGS OF A SIMILAR CLASSROOM STUDY BY HOETKER. (MF)

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by

James Hoetker
Central Midwestern Regional Educational Laboratory, Inc.

and

William P. Ahlbrand, Jr.
Washington University

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Central Midwestern Regional Educational Laboratory, Inc.
10646 St. Charles Rock Road
St. Ann, Missouri 63074
314-429-3535

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James Hoetker
Central Midwestern Regional Educational Laboratory, Inc.

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William P. Ahlbrand, Jr.
Washington University

The classroom observational studies reviewed here are those concerned primarily with describing instructional practices, as opposed to describing the psychological concomitants of different practices. Several of the studies reviewed--favorably comparable to more recent research--apparently had been allowed to fade without trace from the collective memory of the profession before the recent flurry of interest in observational research in the classroom, and we take pleasure in helping to resurrect them.

The authors assisted Professor Bryce Hudgins in the collection of data, including tape recordings of lessons, in the classes of nine junior high school English teachers in early 1966 (Hudgins and Ahlbrand, 1967; Hoetker, 1967). Because of a special interest of one of the authors in the work of Arno Bellack and his associates on the "rules of the classroom language game" (Bellack, et. al., 1966), forty-five hours of typescripts made from the tape recordings were coded according to the category system devised by Bellack (Hoetker, 1967).

The teachers in our sample behaved very precisely according to Bellack's "rules," and we raised three questions about this finding. First, why did

the teachers behave as they did? Second, what were the effects of this sort of teaching upon the pupils? And, third, how typical of classrooms in general was the behavior we had observed?

This review deals only with literature pertinent to the third question. In surveying the results of observational studies that have dealt with teacher verbal behavior, we found that the evidence suggests the classes we observed were very typical.

The paper is organized in the following manner: Bellack's conclusions, in the form of rules of classroom language behavior for teachers and pupils, are presented. Then certain data from which Bellack generalized his "rules" is summarized in tabular form and compared with data from the sample of teachers observed by the authors. Then a chronological review of formal and informal classroom observational studies from the turn of the century to 1963 is presented.

Three recent reports by Arno Bellack and his associates (Bellack and Davitz, 1963; Bellack, 1965; Bellack, Kliebard, Hyman, and Smith, 1966) presented an elaborate description of the verbal behavior of teachers and pupils during four class periods in each of fifteen New York City area eleventh-grade social studies classrooms. They summarized the results of their analyses in a set of descriptive "rules of the language game of teaching." Among the observations so summarized were the following:

> 1. The teacher-pupil ratio of activity in terms of lines of typescript is approximately 3 to 1; in terms of [pedagogical] moves this ratio is about 3 to 2. Therefore... teachers are considerably more active in amount of verbal activity.

2. The pedagogical roles of the classroom are clearly delineated for teachers and pupils. Teachers are responsible for structuring the lesson, soliciting responses. The pupil's primary task is to respond to teacher's solicitations....

3. In most classes structuring accounts for about ten percent of the lines spoken; soliciting, responding, and reacting each account for between twenty and thirty percent of the lines....Teachers vary somewhat from this pattern, but the distribution of variations is fairly restricted with most teachers clustering within a few percentage points of each other for any given category of analysis. Moreover, teachers tend to be remarkably stable over class sessions....

4. The basic verbal interchange in the classroom is the solicitation-response....Classes...differ in the rate at which verbal interchanges take place. The average rate is slightly less than two cycles per minute....[1]

5. By far the largest proportion of the discourse involved empirical (i.e., factual) meanings....Most of the...unit was devoted to stating facts and explaining principles..., while considerably less of the discourse was concerned either with defining terms or with expressing and justifying opinions....(Bellack, 1966; pp. 84-6).

What Bellack observed, then, was that his teachers, despite differences in the sizes, ability levels, and backgrounds of their classes, acted very much like one another. They talked between two-thirds and three-quarters of the time. Their major activity was asking and reacting to questions that called for factual answers from students. Bellack seems to have been somewhat surprised at what he found. Since the purpose of his study was descriptive and taxonomical, Bellack refrained from value judgements, but he did make some suggestions about the relevance of his findings to teacher education and future research.

> The core of the teaching sequence found in the classrooms studied is a teacher's question, a pupil's response, and, more often than not, a teacher's reaction to that response.
>
> This hardly seems like an earth-shaking finding; but perhaps its very obviousness has obscured its central role in the pedagogical process. For if this is indeed the core of what actually happens

TABLE 1. Comparisons Between Selected Mean Measures of Classroom Verbal Behavior in Bellack (1966) and Hoetker (1967)

Measure	Bellack	Hoetker
A. Percentage of teacher talk, moves	61.7	65.7
B. Percentage of teacher talk, lines of typescript	72.1	74.5
C. Distribution of teacher moves, as percentage of all moves		
STRUCTURING	4.8	3.6
SOLICITING	28.8	32.3
RESPONDING	3.5	1.8
REACTING	24.3	27.0
D. Distribution of pupil moves, as percentage of all moves		
STRUCTURING	0.4	0.3
SOLICITING	4.4	2.0
RESPONDING	25.0	30.4
REACTING	5.7	1.1
E. Distribution of teacher moves, as percentage of total lines of typescript		
STRUCTURING	14.5	22.4
SOLICITING	20.3	20.6
RESPONDING	5.0	4.3
REACTING	24.8	31.4
F. Distribution of pupil moves, as percentage of total lines of typescript		
STRUCTURING	3.0	3.4
SOLICITING	2.5	1.2
RESPONDING	15.6	13.1
REACTING	5.1	0.6
G. Percentage of teacher questions calling for memory processes	80.8*	87.9

*Estimated from data on pages 74-75, Bellack (1966)

> in the classroom, it would seem reasonable to focus both teacher training and research specifically on this sequence of teacher-pupil interaction. In fact, the significance of this sequence was probably recognized 40 to 50 years ago in teacher training, when a substantial part of the technical education of teachers was concerned with the skill of asking questions....For some reason, however, in more recently developed programs of teacher training, the importance of the question-answer sequence...has somehow become obscured in comparison to other aspects of the pedagogical process. The purpose of this research is not to prescribe this or any other sequence as the most effective pattern of teaching. But the data seem to indicate that this sequence is indeed the core of pedagogical discourse, at least so far as this sample of classes permits generalization....
>
> If this sequence does indeed define a general pattern of classroom discourse, it would be of paramount importance to investigate this sequence of moves in greater detail, to evaluate its pedagogical effectiveness, and to devise methods of increasing the effectiveness and efficiency of both teacher's solicitations and reactions (Bellack, 1963; pp. 158-60).

Bellack's terminology is new, but the classroom game that it describes appears to have been played according to just about the same set of rules since around the turn of the century: the game, we would suggest, is the one commonly called "recitation."

However, to clarify our usage of the term a bit, what Joseph Mayer Rice called "the recitation" in 1893 was something quite different than the game Bellack described.

> During several daily recitation periods, each of which is from twenty to twenty-five minutes in duration, the children are obliged to stand on the line, perfectly motionless, their bodies erect, their knees and feet together, the tips of their shoes touching the edge of a board in the floor. The slightest movement on the part of a child attracts the attention of the teacher. The recitation is repeatedly interrupted with cries of "Stand straight," "Don't bend the knees,"...and so on. I heard one teacher ask a little boy, "How can you learn anything with your knees and toes out of order?" (1893; p. 98).

One gets the impression that the game described by Bellack's rules is the one Rice called the "oral examination," and which he condemned as

"mechanical" and "mere memowriter work." Rice's impression of the oral examination was that it was a reasonably pleasant but uninteresting interaction--teacher and textbook dominated, fact-centered, and rapidly paced. "In several instances," Rice reported, "when a pupil stopped for a moment's reflection, the teacher remarked abruptly, 'Don't stop to think, but tell me what you know.' "(1893; p. 175).

Although Rice's report contains no real data, one could feel fairly safe stating that the oral examination in the 1890's differed from the game that Bellack's rules describe, only in that in Rice's day pupils often were called upon for fairly lengthy memorized responses.

Sara Burstall, an Englishwoman, visited American schools in 1908 and was struck by the ubiquity of the "time-honoured" question-answer recitation in American classrooms.[2] But the recitation as she described it, unlike both Rice and all later observers, was not necessarily teacher-dominated and was sometimes distinguished by a large amount of pupil-pupil interaction. It was the recitation method, in Burstall's opinion, that distinguished American from English and Continental schools. In the European schools the teacher was at the center of the learning process; he lectured, questioned the pupils, and "buil[t] up new knowledge in class." In the American classroom, on the other hand, "clearly...the master is the textbook." The teacher does not really teach but "acts rather as chairman of a meeting, the object of which is to ascertain whether [the students] have studied for themselves in a textbook" (1909; pp. 156, 158).

Burstall thought the recitation might have some virtues--it was democratic, and putting the pupil on his own promoted independence--and she would not flatly condemn the method. However, she noted that most Europeans

would probably find the method a "waste of time," "very dull and slow," and too easy on the teacher. Further, she was unconvinced that an average pupil could do for himself what the European teacher was expected to do for his pupils: structure the facts and ideas from books and clarify and balance opinions expressed by pupils (1909; pp. 157, 158, 161).

The first major systematic study of classroom behavior was begun shortly after Burstall's visit. In 1912 Romiett Stevens published a report on four years spent observing in classrooms and analyzing stenographic records of the verbal behavior in secondary school classrooms. Stevens reported she had found the following things to be true of the classrooms she observed, and these findings should be compared to Bellack's cited above: On the average, teachers talked 64 percent of the time; there was little difference between teachers in this regard, no matter what the subject or grade level; about 80 percent of the classroom talk was devoted to asking, answering, or reacting to questions; rarely did a teacher's question call for anything besides rote memory or superficial comprehension; the rate of teacher question-asking ranged from one to four questions per minute, with the average being about two per minute. (Compare this last figure with Bellack's two cycle per minute average.)

Stevens made detailed criticisms of the practices she had observed. "The fact," she wrote,

> that one teacher has the ability to quiz his pupils at the rate of two or three questions in a minute, is a matter of comparatively slight importance; the fact that one hundred different classrooms reveal the same methods in vogue is quite another matter. The fact that one history teacher attempts to realize his educational aims through the process of "hearing" the textbook, day after day, is unfortunate but pardonable; that history, science, mathematics, foreign language, and English

> teachers, collectively are following in the same groove, is a matter for theorists and practitioners to reckon with" (1912; p. 16).

Stevens went on to consider the educational implications of the fact that she had found "two, three, and four questions per minute the speed of one teacher after another, in one subject after another" (1912; p. 16).

> FIRST: The large number of questions suggests the maintenance in the classroom, for considerable portions of the time, of a highly strung nervous tension where there should be natural and normal conditions. This high-pressure atmosphere is always a creation or reflection of the manner of the teacher, with whom it is sometimes wholly temperamental and sometimes only assumed in the classroom for the purpose of gripping the attention of pupils.
>
> SECOND: The large number of questions suggests that the teacher is doing most of the work...instead of directing the pupils in the doing....
>
> THIRD: The large number of questions suggests that whenever teachers, either individually or collectively, preserve such a pace for any length of time, the largest educational assets that can be reckoned are verbal memory and superficial judgment....
>
> FOURTH: The large number of questions suggests that there is no time in the mechanics of the school room to cultivate the gentle art of expression....
>
> FIFTH: The large number of questions suggest that there is little thought given to the needs of the individuals. The teacher sets the pace in his questioning; the pupils follow as a body or drop by the wayside....A glance through the stenographic reports shows that few questions are asked by the pupils, and when they are asked, they are passed over apologetically or deferred to a more convenient season.

Bellack also noticed this last circumstance: "In general, the pupil will keep his solicitations to a minimum....He does not solicit in regard to substantive matters."[3] (1963; p. 152).

Stevens continued:

> SIXTH: The large number of questions suggests that we are coming, more and more, to make the classroom the place for displaying knowledge instead of a laboratory for getting and using it. At the close of a class hour, the teacher assigns a lesson for the next day; the pupils take the book home for the purpose of learning the lesson; the following day the teacher gives the pupils the opportunity to display how much or how little they learned. In some cases this represents the process of class activity from the beginning of the year to the end. Hearing the lesson...is the function of education....

Stevens gave no evidence for her contention that "we are coming, more and more, to make the classroom the place for displaying knowledge." Nineteenth-century strictures against depending upon rapid-fire questioning suggest that the practice was common--and denounced--long before Stevens began her work. For instance, in 1860: "Young teachers are very apt to confound rapid questioning and answers with sure and effective teaching" (Morrison, 1860; p. 303).

> SEVENTH: The large number of questions suggests that in actual practice there is very little effort put forth to teach our boys and girls to be self-reliant, independent mental workers. The discrepancy between our theory and practice is nowhere more patent....There is no use in claiming to teach boys and girls how to study, and how to command their intellectual forces by the current practice of keeping them at the point of the bayonet in rehearsal of textbook facts at the rate of two or four per minute (1912; pp. 17-26, *passim*).

What Stevens showed was that the question-answer recitation, played by Bellack's rules, was the dominant, if not the universal, method of teaching in the schools she observed more than fifty years ago. And she set down a number of definitely stated and researchable propositions about the effects of this teaching method on the student. One would have expected that, since there is nothing in the educational process nearly so important as the

teacher's behavior, there would have been a rush to confirm Stevens' observations and to test her conclusions. But nothing of the sort happened. What happened, rather, was that Stevens' conclusions were simply accepted, and her study was incorporated into the educational literature--for a while.

Although it stimulated no experimental studies, Steven's work did inspire a number of the partial replications of her observations. The teachers Stevens had observed seem to have been used as horrible examples for several generations of teachers-in-training.[4] The methods and supervision textbooks of the next two decades often reported new observations of classrooms that tended to confirm that what Stevens had observed was very close to the typical situation, and the authors of these texts agreed that the teacher behavior Stevens had observed was undesirable and should be changed.

Colvin (1919), for instance, generalizing from his observations of beginning teachers, stated that "more than anything else, the character of the questions asked determines the nature and value of teaching" (1919; p. 266). But then he reported that out of 500 teacher questions taken at random from those he had recorded, only "about five percent...could be considered in any way genuine thought questions" (1919; p. 269).

W. S. Miller, writing in 1922, quoted Stevens' observational evidence and made the following criticism of the question-answer recitation as it was to be found in the schools:

> The writer is convinced that in classes as organized at present thought questions are put at a rate too rapid for a large majority of the class. The rate in most classes is more nearly adapted to the best ten pupils in one hundred. Most teachers, especially beginners, show considerable uneasiness...if answers to thought questions that involve the grasping of relations much more complex than those in the analogies tests are not

forthcoming within ten seconds. If an answer is not given almost immediately, the teacher interrupts by meaningless remarks, by a needless repetition of the question, by passing the question on to some other pupil, or by answering the question herself. She cannot endure the silence that must prevail while the pupil is thinking and organizing his material and commonly feels she must break the silence by making a remark of some kind, however useless and distracting it may be.

During the past year the author has had occasion to observe the work of over one hundred practice teachers. There was no one fault more common than the one under discussion. It is due to the failure to recognize that time is required to perceive thought relations and that a large proportion of the time in the recitation must be allowed for the exercise of this important function.[5] Fourteen seconds seems a long time to wait for a student to see relations as simple as those in the analogies test, in which the relation when perceived is expressed by a single word and in presence of one person. Many of the thought questions put by teachers are much more complex than that and necessitate forming the answer in good connected English and giving it before thirty of his classmates.

> If the reader is a teacher, he can observe this fault by putting a thought question to some member of his class and then measuring with a stop watch the interval that elapses between the question and the expected answer. It is rare, indeed, that the teacher does not show considerable uneasiness before ten seconds have elapsed (Miller, 1922; p. 207).

Miller concluded,

> In the light of the foregoing discussion, it is clear why there are reasons for alarm when it is reported that recitations are frequent in which two hundred or more questions are asked (Miller, 1922; p. 208).

Monroe and Carter (1923) carried out a questionnaire study of the question-asking behaviors of 199 Illinois secondary teachers. They reasoned that "the types of questions used both for stimulating and directing the mental activities of the learner and for measuring the results of teaching reflect in a subtle way the educational objectives of the teacher" (1923; p. 7). And they commenced their study by assuming that Stevens' work "had been very

influential in causing teachers to give more attention to types of questions asked of their students" (1923; p. 5). This assumption proved unfounded, and an analysis of their data forced the authors to conclude that "many teachers are failing to give attention to the procedure which students use in asking questions" (1923; p. 19), and that "teachers are not sufficiently conscious of the types of questions which they are accustomed to ask [or] of the significance of these types" (1923; p. 26).

In an unpublished study Pepoon (1926) observed classroom questioning practices with the express purpose of seeing whether conditions had changed since Stevens had made her study. In her bibliography, Pepoon was able to trace the concern with teacher questioning back to 1847, but she remarked that distressingly little attention had ever been paid to questioning behavior, despite a slight increase in interest in the subject since 1912.

Unfortunately, it is difficult to interpret Pepoon's findings, as she did not break down questioning rates by classes, but lumped together data from academic classes, physical education, and manual training. But even with the inclusion of classes in which little questioning would occur, she found that regular teachers asked an average of one question every 1.22 minutes, while student teachers asked a question every 1.02 minutes.

One section of a study by Barr (1929) concerned itself with recitation behavior. Barr reported a non-significant tendency for his supposedly "good" teachers to talk less, ask fewer questions, and get better quality responses than his "poor" teachers.

> The three most conspicuous findings in the data were (a) the great amount of talking done by both good and poor teachers, (b) the short responses made by pupils (about twelve seconds...

> on the average), and (c) the large number of questions asked by both good and poor teachers. In those respects the study confirms an earlier study by Romiett Stevens. The average number of questions asked for a recitation period of forty minutes, for good and poor teachers were 92.7 and 101.7, respectively. Miss Stevens found that teachers asked, on the average, 81.2 questions per recitation period....From these facts it is apparent that the situation has not materially changed during the fifteen year period which has elapsed between the two studies (1929; pp. 83-85, *passim*).

Barr reported that a further examination of stenographic records of the classes of "thirty-nine good and thirty-eight poor teachers" revealed no significant difference in the number of thought questions asked. "Probably the most interesting fact brought out by these data is the large number of fact questions asked by good and poor teachers alike" [6] (1929; p. 86).

Colvin (1931), reported on a number of his observations in secondary classrooms. He found one English teacher who asked 376 factual questions in 180 minutes of class time spent on Julius Caesar (1931; p. 311). Another asked two hundred factual questions in five periods spent on Scott's Lady of the Lake (1931; p. 311). In twenty randomly selected classrooms, one quarter of all questions called for "yes" or "no" answers.

> In the course of a lesson observed by the writer on the development of a spirit of national unity in Greece the main theme was lost sight of through overemphasis on small details. Ninety-five questions were asked in the class period and ninety-two concerned facts touched on in the text. Of these, twenty-five related to the names of poets, the dates of their birth and death, the places where they lived and fragmentary and uncertain details on their lives. Thirty-two questions of a similar nature were asked concerning the early Greek philosophers. Twenty questions were devoted to the Eleusinian mysteries and touched stories from mythology, and the nature of the Eleusinian rites and ceremonies. The remaining questions concerned details of the Olympian games. In all of these questions only one related definitely to the service of the poets, the philosophers, the religious festivals, and the athletic contests in giving the Greek people a common national spirit. The facts were treated as mere facts all of the same importance (1931; p. 313).

Earlier in the book Colvin had made clear what he considered to be the legitimate uses of rapid-fire questioning. Using the example of oral translation in a Latin class, Colvin argued that the question-answer method is effective for drilling and testing becuase it compels student attention to a process without intrinsic interest and reduces the time that has to be spent on the least profitable sort of classroom work (1931; pp. 66-7). And unlike Stevens and Barr, Colvin reported (although without describing the behavior) that he had observed teachers in whose classes thought questions predominated and who were "evidently attempting to do more in their courses than to drill their pupils on bare facts" (1931; p. 311).

Bagley (1931), wishing to see if he could detect a movement away from the recitation over textbook materials, such as should have been expected in response to changes in educational philosophy, analyzed two sets of data: a large number of school surveys and a collection of "observers" reports concerning more than five hundred classroom exercises, presumably a random sampling...representing thirty states and all sections of the country" (1931; p. 7). The surveys and the reports presented contradictory accounts of what was going on in the classrooms. Each of the school surveys condemned an overemphasis on textbook facts. "One who studies such reports," Bagley concluded, "can scarcely escape the conclusion that the work of the typical American classroom...has been and still is characterized by a lifeless and perfunctory study and recitation of assigned textbook materials" (1931; pp. 10-11). Bagley also presents evidence of a tendency for teachers with less training to be more dependent on the recitation.

The observational reports assembled by Bagley claimed to find teachers using newer methods than the recitation, but he put little faith in the

reports. He was skeptical about the objectivity of his respondents: "They may have had a tendency to interpret what they saw as conforming closely with generally accepted standards" (1931; p. 18).

Briggs (1935), summarizing the results of extensive observations by one of his graduate students, reported that sixty-five percent of secondary teachers used "the conventional procedure of questions by the teacher on the assignment with answers by the pupils," and some of the thirty-five percent who did not use that method were teaching art, shop or physical education (1935; p. 750).

Woodring (1936), in an article on the use of stenographic reports for improving instructional practices (a vogue at the time), noted that in "99 percent of all graphs analyzed by the writer the teacher far exceeds the total pupil participation" [7] (1936; p. 514). Percentages of eighty percent teacher talk were reported to be common, but there is little in the article of detailed information that can be compared to the more formal studies.

In a series of papers Corey (1939, 1940a, 1940b, 1941; Corey and Fahey, 1940) reported on the results of observational studies at the University of Wisconsin High School and on the analysis of stenographic records of a week's work in the classes of six teachers in the school. As part of a dissertation under Corey's direction, Fahey (1939; Fahey and Corey, 1941) had kept a verbatim record of pupil questions in six classes for an entire year.

Teachers, Corey reported on the basis of the thirty-six stenographic records, talked two-thirds of the time. In thirty-six hours, teachers asked 1260 questions, pupils only 114. The average pupil utterance was eleven

words long. There were no striking differences between teachers. The teachers dominated every class session, and "the consequence of this dominance was to stress the importance of facts...which might be used in the solution of problems rather than the solution of the problems themselves" (1940a; pp. 371-2).

In another paper (1940b), Corey expanded on the implications of these findings.

> A verbatim record was made during the academic year 1938-39, of all oral questions asked by teachers and pupils in six classes in a laboratory high school. Of a total of approximately thirty-nine thousand inquiries, the pupils were responsible for fewer than four thousand. This ratio of more than eight questions asked by teachers to every one asked by a pupil was fairly constant from class to class...
>
> The chief purpose of this analysis of a complete talk record was to get some evidence bearing on the growth of pupils in understanding. From this point of view the study was not successful for the simple reason that during the five classes involved the pupils did not talk enough to give any evidence of mental development (1940b; p. 745).
>
> The frequency with which the teachers asked questions is probably proof sufficient that no great number of "thoughtful" answers was expected. Apparently, few were obtained. If it be assumed that there were 1,500 minutes of observation and that no time was spent in written work, the 1,260 questions asked by the teachers indicates that one question was asked about every 72 seconds (1940b; p. 750).

This questioning rate is lower than that reported by other observers because (1) one of the six teachers used up almost all the class time in oral reading (Corey, 1940b; p. 748), and (2) "one class...made use of supervised study procedure during part of each hour" (Fahey, 1939; p. 52).

Corey continued:

> The 169 pupils, for the five day period, asked less than an average of one question each. Fahey found that the median

number of questions asked by the pupils during two consecutive semesters was eleven. During the course of the year seven of the children asked no questions whatsoever.

Neither the questions nor the answers were long enough to express involved concepts. The difference between the length of the questions of the teachers and the pupils was rather marked, as was the variation from class to class in the length of questions asked by pupils. In the eleventh-grade English class the one question asked by a pupil was a monosyllabic "What?"

If talk is a type of activity which results in learning on the part of the speaker, it might be reasonable to assume that the greater part of the class time should be consumed by pupil talk.... The variation from class to class is significant. In seventh-grade science, the pupils talked 20 percent of the time, while in eleventh-grade English, largely because of oral reading, the pupils were...talking approximately half of each period. Speaking in terms of averages, the chances were about sixty to one that the teacher of a class rather than a particular pupil would be talking at any one time, and about two to one that teachers rather than pupils would be talking (1940b; pp. 751-2).

Corey was less willing than Stevens, in the absence of empirical evidence about the effects of the behavior he had observed, to condemn the recitation; but his disapproval is made clear by the tone of his conclusion.

The pedagogical significance of these data depends somewhat on one's philosophy of instruction. If it is contended, first, that questions asked in class should require pupils to reflect, to make inferences, and to develop generalizations, it is clear that most of the oral questions asked by the teachers of these classes were not satisfactory. Second, if the number of spontaneous questions asked by pupils reflect their interest in, and need for, the learning being offered them, such experiences in the classes observed were not particularly stimulating. Furthermore, the fact that the teachers did most of the talking implies a conception of teacher-pupil relationship that is more conventional then desirable. It probably would be impossible to have a completely objective and disinterested person visit a high school classroom and make observations, but his comments would, in all likelihood, be revealing. One of the first inquiries he might make, if the data of this study be considered typical, would be to discover why the mature persons (presumably the teachers) had to ask the immature persons (presumably the pupils) so many questions. There is some basis for expecting the learners to be the interrogators, Socrates to the contrary notwithstanding (1940b; p. 752).

Jayne (1945) reported two studies, carried out in 1940, that made use of recording equipment. These studies were attempts to relate various measures of learning and recall to a large number of potentially significant teacher behaviors. The results were inconclusive and sometimes contradictory. Jayne, however, was aware of earlier studies on teacher questioning (though not of Corey's) and compared his own observations with those of Stevens and Barr.

> Since teachers have long been criticized for the large number of questions they ask it is interesting to compare the results of Stevens' and of Barr's studies of this point with the present investigation....Stevens in 1912 found teachers asking over 100 questions per forty minute period. Barr in 1929 found his "good" teachers asking 92.7 questions and his "poor" teachers 101.7 questions for a like period, while the present study showed an average of only 65 (1945; p. 121).

Because of a number of methodological problems which will not be gone into here, Jayne's data on this point cannot be taken as indicating a change in patterns of teacher questioning behavior.[8]

Another conclusion of Jayne's, relevant to the subject of this paper, is highly questionable.

> For a number of years teachers have been taught that more pupil activity and less teacher talk is needed, and some supervisors have used the ratio of teacher and pupil participation as an important item in the evaluation of teaching. Because of the stress which has been placed on this during recent years, it is interesting to compare the ratio of pupil talk as found in three studies....Stevens found teachers doing 64% of the talking, Barr found his "good" teachers doing 52% and his "poor" teachers 56.7%. The present study shows teachers doing 38.7% of the talking. <u>Thus there has been a gradual change in the direction approved by educational theory, and teachers are today apparently talking much less than 30 years ago</u> (1945; p. 119, emphasis added).

This not only does not jibe with the observations made by Corey, Flanders, Bellack, and the present writers, but it is also a highly arbitrary interpretation of Jayne's own data. A more defensible generalization would have been that, in Jayne's sample, there was a greater range of behaviors than in the other samples. Four teachers in Jayne's sample were reported to have spoken only 2.2, 4.4, 11.0, and 11.4 percent of the words in their classes. Evidently these teachers introduced the lesson and turned things over to a student leader or a panel. If these teachers are disregarded, Jayne's teachers look much like those reported on by other observers.

That this is indeed the case is suggested by two findings in Jayne's study that closely parallel the other studies and seem incompatible with the idea that teacher behavior actually had changed. First, the average length of pupil utterances was 16.3 seconds (1945; p. 120). Second, Jayne reported that there was "so little evidence of work" toward promoting "pupil initiative in raising questions" or "correct oral expression" that "no further study was made" of these behaviors (1945; p. 109).

Dale and Raths (1945) reported they had found the question-answer method the preferred one in two hundred classrooms they visited. Spears (1950) reported that, from an informal survey conducted by himself "in graduate classes in schools of education widely scattered over the country," he was forced to conclude that the recitation of textbook facts was still the "representative" method of teaching in American schools.

The year 1950 may conveniently be used to mark the revival of interest of educational researchers in recording and observing classroom behavior.[9] But the studies undertaken between that date and Bellack's publication of his

findings have commonly been concerned with dimension of classroom behavior more complex or more abstract than questioning practices. Therefore--except for findings such as Flanders' famous "rule of two-thirds"--the results of these studies are not directly comparable to the studies we have reviewed. Besides, several excellent reports of this recent observational work are readily available, e.g., Medley and Mitzel (1963), Biddle and Ellena (1964), Openshaw and Cyphert (1966), Kliebard (1966), and Biddle and Adams (1967).

The studies that have been reviewed, show a remarkable stability of classroom verbal behavior patterns over the last half century, despite the fact that each successive generation of educational thinkers, no matter how else they differed, has condemned the rapid-fire, question-answer pattern of instruction. This opens a number of interesting avenues of inquiry. What is there about the recitation, for instance, that makes it so singularly successful in the evolutionary struggle with other, more highly recommended, methods? That is, what survival needs of teachers are met uniquely by the recitation?

Then there is the question of what seems to be the monumental inefficacy of teacher training institutions in affecting the classroom behavior of teachers. If the recitation is a poor pedagogical method, as most teacher educators long have believed, why have they not been able to deter teachers from using it?

Or, is it not possible that the practicing teachers are right, and the professors unrealistic, and that the recitation--for some reason--is the best pedagogical method? Or the only practicable one for most teachers?

These and other questions of a similar sort seem to us to be of basic importance to anyone interested in improving teaching practices and teacher training.

FOOTNOTES

1. A teaching cycle is a series of moves, commencing with a structuring or soliciting move and continuing until another cycle is initiated by another structuring or soliciting move.

2. See Thayer (1928) for an excellent brief history of the recitation method in American schools.

3. In the sample of classroom behavior that we studied, teachers made almost 1.5 factual errors for every ten times they attempted to answer pupil questions about the subject matter, a statistic which may do much to explain the scarcity of pupil questions.

4. Stevens had published a number of her stenographic records in 1910, and, in the following years, other verbatim records of classroom discourse continued to be published. For example: Peterson, *et al* (1928), Crout (1931), Halter (1931), Payson and Haley (1929), Knudsen (1932), Brooks (1932), Nyberg (1932, 1933a, 1933b, 1933c). These documents should be of interest to anyone curious about actual changes in teaching methods, although most seem to be edited and therefore hard to evaluate. See also Cocking (1930) and Woodring (1936) and Good, Barr, and Scates (1936; p. 397).

5. The questioning rates of two to four per minute may underestimate the actual rate of questioning. Teachers in the authors' study asked questions at a mean rate as high as eleven questions per minute when the rate was figured as questions per minute of substantive interaction, rather than questions per minute of class time. Seldom were students given as long as fourteen seconds between questions.

6. In the literature we have surveyed there is little evidence that the rapid-question syndrome is, or has been, as important a part of the classroom procedure in the grades as it apparently has been in secondary schools. Most of the published evidence deals with secondary classrooms and it is probably safe to generalize only about them. But see Dodl (1965; p. 14): "Little evidence is available beyond the intuitive judgement of those who work with elementary school children, but the probability appears to be high that the same situation [i.e., the prevalence of the question-answer recitation] exists in the elementary classroom as is reported to exist in the high school classroom."

7. A paper by DeLong and Smith (1931) may be relevant, because it suggests that the particular pattern of teacher domination observed in the classroom might be in part a function of the peculiar nature of the classroom communications system. DeLong and Smith reported their analysis of a discussion group led by Dr. Kilpatrick at the 1930 White House Conference. Although they presented the discussion as a "new method" which they recommended to teachers for imitation, their data reveals that the leader asked more than twice as many questions as the students, made about 57% of all the statements, that two participants (out of twenty) made almost one-third of the contributions, and that nine of

the twenty spoke only once. The "teacher," that is, still dominated the group, only in this method he shared his prerogatives with the two most aggressive "pupils."

8. But one thing should be noted: The rate of questioning ascribed to Stevens is for those "four lessons where exact times are given...Miss Stevens reports an average of 61.2 questions per recitation period." (1945; p. 120). This is incorrect: The average Stevens reported was 81.2 questions per period.

9. By such researchers as Amidon, Aschner, Bales, Biddle, Flanders, Gallagher, Hudgins, Hughes, Kounin, Jackson, Moustakas, Medley, Mitzel, Moyer, Perkins, Rabinowitz, B. O. Smith, L. M. Smith, Taba, Withall, and so on.

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